

THE ECOLOGICAL BASIS FOR RIVER MANAGEMENT edited by D. M. Harper and A. J. D. Ferguson, John Wiley and Sons, Chichester, 1995. No. of pages xvi + 614, Price: £79.95. ISBN 0-471-9515-1X.

This substantial and timely volume consists of 40 chapters covering a broad range of topics concerned with river management. The book is the result of an international conference held at Leicester University in March 1993, after the National Rivers Authority (NRA) in England and Wales had been established for four years. Intentionally, the authors and contributors are a mix of practitioners and academics involved with river management, many from the UK and other European countries, a few from Australia and South Africa, but none from North America. This gives a good breadth to the experiences of the authors, although it is unfortunate that the vast experience of river management in North America is not represented. Also intentionally, the topics addressed are those which had been high on the agenda during the NRA's short lifespan.

The book is not divided into sections, but the editors indicate that it is ordered into six main themes with chapters 1–10 dealing with issues of water quantity, chapters 11–17 with water quality, chapters 18–25 with management of the river environment, chapters 26–31 with management of fish stocks, chapters 32–35 with fishing and other recreational activities, and the final chapters (36–40) with wider issues of catchment management. The book would be easier to use if it was more obviously divided into sections, particularly since it only gradually becomes clear that the first chapter in each section is more generalized and introductory than the following chapters.

The overall range of topics presented in one volume makes for a very useful reference collection for academics and practitioners alike, and an essential tome on the bookshelf for anyone interested in rivers. There is, however, a noticeable omission in the book since it contains relatively little on the management of riparian areas to balance the wealth of information on in-stream issues. A chapter by Wade does include a section of bankside and riparian communities, and another chapter by de Waal, Child and Wade discusses the management of three alien invasive riparian species. There is also an

interesting study by Gurnell, Simmons and Edwards which explores the use of multivariate ecological analyses and a GIS for characterizing the river environment from the riparian and in-channel plant species present. A further chapter by Smith, Youdan and Redmond discusses practical aspects of restoring a tributary of the River Nene, emphasizing the importance of integrating channel restoration with riparian land use.

Management of flows and assessing the flow needs of in-stream species using standard models such as PHABSIM are discussed in the first section of the book. However assessment of the flow needs of riparian species and the management of flows for riparian as well as in-stream plant and animal communities is a poorly developed area of research and this gap is reflected in the book. A chapter by Brookes on the importance of high flows for riverine environments brings to the fore the importance of examining geomorphological change in channel patterns through time, and particularly their response to floods. Clearly flooding patterns are of prime importance in both the creation and maintenance of riparian areas and the plant and animal communities that they support. The literature on riparian and particularly on floodplain zones is large, especially in continental Europe and North America, reflecting an appreciation of the linkages through flooding and runoff patterns between the channel and the floodplain. The emphasis on in-stream issues in this book undoubtedly reflects the former NRA's priorities to date and rightly so, but it is to be hoped that the new Environment Agency's agenda will move with the times and embrace a broader concept of river management. Unfortunately, as pointed out by Boon in his chapter on the relevance of ecology to the statutory *protection* of British rivers, in the UK at least, inclusion of substantial riparian zones, let alone wider catchment areas, is unlikely to become a statutory duty of the Environment Agency because of the financial (and presumably political) costs.

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NEW UNCERTAINTY CONCEPTS IN HYDROLOGY AND WATER RESOURCES edited by Z. W. Kundzewicz, Cambridge University Press/UNESCO/IASH International Hydrology Series, 1995. No. of pages: xiii + 322. Price: £75.00 (hb). ISBN-0-521-46118-9.

This set of papers stems from an International Workshop on *New Uncertainty Concepts in Hydrology and Water*

Resources held at Madralin, Poland, in 1990. Given the title of the volume and workshop it is a pity that it has taken four years to produce the proceedings, especially since many of the methods presented in 1990 were not particularly new then. However, there is much of interest in the 37 papers presented, the first of which, by the editor Professor Kundzewicz, gives a good overview of the other contributions and of the trends in this rapidly developing area of research. The papers are organized